

IN THE CLAIMS:

Please amend claims 3, 5-7, 14-15, and 23 as follows:

1-2. (Cancelled)

3. (Currently Amended) A method for displaying a gene expression phenomenon in one or more living organisms in a system comprising a database that collects ~~memorizes~~, for each cell or each site of said living organisms along a time axis, data indicative of a shape of said cell or site and expression data associated with a degree of expression of the gene expression phenomenon in said cell or site along a time axis; and processing means adapted to obtain said data indicative of the shape and expression data that are collected ~~memorized~~ in said database to visualize and display the gene expression phenomenon on a display screen, wherein said method comprising:

displaying as a three-dimensional image on the display screen a shape of said living organisms of which the gene expression phenomenon is observed;

setting a viewpoint by a user via a keyboard or a mouse on a three-dimensional space where the gene expression phenomenon in said living organisms displayed is to be observed;

reading the gene expression data of said cell or site of said living organisms out of said database, creating a plurality of three-dimensional images representing the gene expression phenomenon at the viewpoint set at said second step or at a fixed viewpoint, to display at least one of said three-dimensional images in multiple tones using one color or multiple colors, each of the tones corresponding to a degree of expression of the gene expression phenomenon; and

simulating gene expression data by analyzing actual gene expression data and chronologically displaying a simulated change in shape of said cell or site of said living organisms caused by an external stimulation artificially incurred by altering simulation parameters according to a planned experiment and a change in shape of a cell or site caused by internal activities of said cell or site of said living organisms; and

displaying an animation of a three-dimensional image representing the gene expression phenomenon from a certain viewpoint at a certain instant of time.

4. (Cancelled)
5. (Currently Amended) A method for displaying a gene expression phenomenon in one or more living organisms in a system comprising a database that collects ~~memorizes~~, for each cell or each site of said living organisms along a time axis, data indicative of a shape of said cell or site and expression data associated with a degree of expression of the gene expression phenomenon in said cell or site along a time axis; and processing means adapted to obtain said data indicative of the shape and expression data that are collected ~~memorized~~ in said database to visualize and display the gene expression phenomenon on a display screen, wherein said method comprising:
 - displaying as a three-dimensional image on the display screen a shape of said living organisms of which the gene expression phenomenon is observed;
 - setting a viewpoint by a user via a keyboard or a mouse on a three-dimensional space where the gene expression phenomenon in said living organisms displayed is to be observed;
 - reading the gene expression data of said cell or site of said living organisms out of said database, creating a plurality of three-dimensional images representing the gene expression phenomenon at the viewpoint set at said second step or at a fixed viewpoint, to display at least one of said three-dimensional images in multiple tones using one color or multiple colors, each of the tones corresponding to a degree of expression of the gene expression phenomenon;
 - displaying in parallel on the display screen three-dimensional images representing expression phenomena for each cell or site of said living organisms of multiple species; and
 - comparing the three-dimensional images representing the gene expression phenomena for each cell or site of said living organisms of multiple species to visually display similarities therebetween.
6. (Currently Amended) A method for displaying a gene expression phenomenon in one or more living organisms in a system comprising a database that collects ~~memorizes~~, for each cell or each site of said living organisms along a time axis,

data indicative of a shape of said cell or site and expression data associated with a degree of expression of the gene expression phenomenon in said cell or site along a time axis; and processing means adapted to obtain said data indicative of the shape and expression data that are collected ~~memorized~~ in said database to visualize and display the gene expression phenomenon on a display screen, wherein said method comprising:

displaying as a three-dimensional image on the display screen a shape of said living organisms of which the gene expression phenomenon is observed;

setting a viewpoint by a user via a keyboard or a mouse on a three-dimensional space where the gene expression phenomenon in said living organisms displayed is to be observed;

reading the gene expression data of said cell or site of said living organisms out of said database, creating a plurality of three-dimensional images representing the gene expression phenomenon at the viewpoint set at said second step or at a fixed viewpoint, to display on the display screen at least one of said three-dimensional images in multiple tones using one color or multiple colors, each of the tones corresponding to a degree of expression of the gene expression phenomenon; and

mapping said ~~expression data~~ three-dimensional images of said cell or site along a time axis to ~~be displayed~~ display said three-dimensional images on the display screen in one color or multiple colors in various scales depending on a gene expression frequency in said cell or site.

7. (Currently Amended) A method for displaying a gene expression phenomenon in one or more living organisms in a system comprising a database that collects ~~memorizes~~, for each cell or each site of said living organisms along a time axis, data indicative of a shape of said cell or site and expression data associated with a degree of expression of the gene expression phenomenon in said cell or site along a time axis; and processing means adapted to obtain said data indicative of the shape and expression data that are collected ~~memorized~~ in said database to visualize and display the gene expression phenomenon on a display screen, wherein said method comprising:

displaying as a three-dimensional image on the display screen a shape of said living organisms of which the gene expression phenomenon is observed;

setting a viewpoint by a user via a keyboard or a mouse on a three-dimensional space where the gene expression phenomenon in said living organisms displayed is to be observed;

reading the gene expression data of said cell or site of said living organisms out of said database, creating a plurality of three-dimensional images representing the gene expression phenomenon at the viewpoint set at said second step or at a fixed viewpoint, to display on the display screen at least one of said three-dimensional images in multiple tones using one color or multiple colors, each of the tones corresponding to a degree of expression of the gene expression phenomenon; and

mapping ~~expression data~~ three-dimensional images of two or more cells or sites on coordination points along an axis to display said three-dimensional images on the display screen in one color or multiple colors in various scales of a change in gene expression frequency in said cells or sites in parallel.

8-13. (Cancelled)

14. (Currently Amended) A method for displaying a gene expression phenomenon in one or more living organisms in a system comprising a database that collects memorizes, for each cell or each site of said living organisms along a time axis, data indicative of a shape of said cell or site and expression data associated with a degree of expression of the gene expression phenomenon in said cell or site along a time axis; and processing means adapted to obtain said data indicative of the shape and expression data that are collected ~~memorized~~ in said database to visualize and display the gene expression phenomenon on a display screen, wherein said method comprising:

displaying as a three-dimensional image on the display screen a shape of said living organisms of which the gene expression phenomenon is observed;

setting a viewpoint by a user via a keyboard or a mouse on a three-dimensional space where the gene expression phenomenon in said living organisms displayed is to be observed;

reading the gene expression data of said cell or site of said living organisms out of said database, creating a plurality of three-dimensional images representing the gene expression phenomenon at the viewpoint set at said second step or at a fixed viewpoint, to display at least one of said three-dimensional images in multiple tones using one color or multiple colors, each of the tones corresponding to a degree of expression of the gene expression phenomenon; and

~~coordinating~~ organizing and displaying a three-dimensional image of the expression phenomenon and a position on a three-dimensional gene map of a gene ~~on a gene map~~ that causes the expression phenomenon.

15. (Currently Amended) A method for displaying a gene expression phenomenon in one or more living organisms in a system comprising a database that collects ~~memorizes~~, for each cell or each site of said living organisms along a time axis, data indicative of a shape of said cell or site and expression data associated with a degree of expression of the gene expression phenomenon in said cell or site along a time axis; and processing means adapted to obtain said data indicative of the shape and expression data that are collected ~~memorized~~ in said database to visualize and display the gene expression phenomenon on a display screen, wherein said method comprising:

displaying as a three-dimensional image on the display screen a shape of said living organisms of which the gene expression phenomenon is observed;

setting a viewpoint by a user via a keyboard or a mouse on a three-dimensional space where the gene expression phenomenon in said living organisms displayed is to be observed;

reading the gene expression data of said cell or site of said living organisms out of said database, creating a plurality of three-dimensional images representing the gene expression phenomenon at the viewpoint set at said second step or at a fixed viewpoint, to display at least one of said three-dimensional images in multiple tones using one color or multiple colors, each of the tones corresponding to a degree of expression of the gene expression phenomenon; and

~~coordinating~~ organizing and displaying three-dimensional images of the expression phenomenon of a gene in two or more cells or sites and a position on a

three-dimensional gene map of a gene ~~on a gene map~~ that causes the expression phenomenon.

16-22. (Cancelled)

23. (Currently Amended) A method for displaying a gene expression phenomenon in one or more living organisms in a system comprising a database that collects ~~memorizes~~, for each cell or each site of said living organisms along a time axis, data indicative of a shape of said cell or site and expression data associated with a degree of expression of the gene expression phenomenon in said cell or site along a time axis; and processing means adapted to obtain said data indicative of the shape and expression data that are collected ~~memorized~~ in said database to visualize and display the gene expression phenomenon on a display screen, wherein said method comprising:

displaying as a three-dimensional image on the display screen a shape of said living organisms of which the gene expression phenomenon is observed;

setting a viewpoint by a user via a keyboard or a mouse on a three-dimensional space where the gene expression phenomenon in said living organisms displayed is to be observed;

reading the gene expression data of said cell or site of said living organisms out of said database, creating a plurality of three-dimensional images representing the gene expression phenomenon at the viewpoint set at said second step or at a fixed viewpoint, to display at least one of said three-dimensional images in multiple tones using one color or multiple colors, each of the tones corresponding to a degree of expression of the gene expression phenomenon; and

mapping expression data of a cell or a site of a plurality of genes of one living organism on coordination points along a circumferential path on a ~~eylindrieal~~ plane, said expression data of each of the plurality of genes being shown as a bar with a height corresponding to a degree of one respect of gene expression phenomenon.